

## ERGONOMICS

1. Purpose. This document establishes guidance to effectively minimize and control Cumulative Trauma Disorders (CTD).

2. Applicability. This document is applicable to all Portland District employees that conduct lifting, handling, carrying or other physical activities that stress the body's capabilities.

3. Reference. EM385-l-1

4. Definitions.

a. CTD. Disorders of muscles, tendons, peripheral nerves, or vascular system. These can be caused, precipitated, or aggravated by intense, repeated, or sustained exertions, motions of the body, insufficient recovery, vibration, or cold.

b. Ergonomics. The field of study that seeks to fit the job to the person, rather than the person to the job. This is achieved by the evaluation and design of workplaces, environments, jobs, tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace.

c. Workplace Risk Factors. Action in the workplace, workplace conditions, or a combination thereof, that may cause or aggravate a work-related musculoskeletal disorder. Workplace risk factors include, but are not limited to, repetitive, forceful or prolonged exertions; frequent or heavy lifting; pushing, pulling, or carrying of heavy objects; a fixed or awkward work posture, contact stress; localized or whole-body vibration, cold temperatures, and poor lighting (leading to awkward postures). These workplace risk factors can be intensified by work organization characteristics such as inadequate work-rest cycles, excessive work pace and/or duration, unaccustomed work, lack of task variability, machine work, and piece rate.

d. Work-Related Musculoskeletal Disorder. An injury or an illness of the muscles, tendons, ligaments, peripheral nerves, joints, cartilage (including intervertebral discs), bones and/or supporting blood vessels in either the upper or lower extremities, back, or neck, that is associated with musculoskeletal disorder workplace risk factors and are not limited to cumulative trauma disorders, repetitive strain injuries or illnesses, repetitive motion injuries or illnesses, and repetitive stress injuries and illnesses. Refers collectively to signs, or persistent symptoms, or clinically-diagnosed work-related musculoskeletal disorders when they are caused or aggravated by exposure to workplace risk factors.

5. General.

a. The SOHO will implement the Ergonomics Program for the Portland District. This will include the following:

(1) Assist CENWP-CT with reviewing requests for ergonomic furniture and work stations.

(2) Coordinate with CENWP-HR to review and forward all CTD cases to Office of Worker's Compensation for review and action.

(3) Provide ergonomic workstation reviews upon request to reduce and/or eliminate repetitive and prolonged status activities, forceful exertions, awkward postures, excessive vibrations, and other CTD related conditions. Assign a RAC using the safety RAC scoring system and enter items into the District's hazard abatement log, and if necessary, the master hazard abatement log. Meet with individual supervisors to help educate and inform them of options to assist their employees in reorganizing and/or changing their present workstation to enhance ergonomic concerns.

(4) Monitor all accident reports for ergonomic-related injury trends.

(5) Assist with the preparation of AHA which address CTD concerns.

(6) Obtain management commitment and employee involvement to aggressively prevent CTD injuries and control claims and costs related to these injuries by using a proactive approach.

(7) Recommend administrative controls whenever necessary to reduce exposure.

(8) Provide training as appropriate.

(9) Provide educational material for our contractors and sample JHAs dealing with CTDs for specialized trades.

(10) Include CTDs as a rating element in the safety management evaluations of Portland District elements

b. The CPAC staff will coordinate closely with CENWP-SO to provide information on employee compensation case status, as related to present and future duty restrictions.

c. CENWP-CT will coordinate closely with CENWP-SO regarding ergonomic review of all new requests for furniture, workstations, machines, etc. Procure ergonomically-designed equipment.

d. Division managers and supervisors will:

(1) Educate employees on principles of ergonomics and CTDs.

(2) Perform ergonomic and JHA on proposed and current work processes to identify hazardous conditions and unsafe work practices.

(3) Coordinate with CENWP-SO and the CPAC compensation specialist to identify positions that can be utilized for light duty, and return to work programs.

(4) Participate with CENWP-SO when performing work site ergonomic surveys and develop corrective actions for identified deficiencies.

(5) Ensure personnel engaged in high risk hazardous occupations receive task specific injury prevention ergonomic review.

(6) Ensure adequate financial resources are available to meet program needs with special emphasis on mishap prevention for CDTs.

(7) Ensure adequate planning is given to ergonomic issues when making work-related assignments.

d. Portland District employees will:

(1) Notify their supervisor immediately of any worksite condition that could contribute or lead to CTDs.

(2) Make recommendations on how worksite/stations may be changed to eliminate or reduce hazards that contribute CTDs.

(3) Immediately report all CTD cases through the accident reporting channels.

(4) Utilize all equipment provided to help reduce repetitive and prolonged static activities, forceful exertions, awkward postures, excessive vibration, and workstations lacking adjustability.

6. Actions. Ergonomic surveys of workstations and JHA preparation guidance are available from CENWP-SO upon request.

## **PORTLAND DISTRICT ERGONOMICS PROGRAM**

### **1. Background of Ergonomics Program**

*The most prevalent kind of injury involving lost time & medical treatment in Portland District is exertion/strain & sprain. This rarely varies from year to year and is a universal situation in most workforces. A good on going ergonomics program is an effective method to counteract this high rate. Ergonomics is a science that involves adapting the workstation, tools and equipment to employees needs instead of vice versa. Good use of ergonomics in the design of tools, equipment and workplaces can*

*1) reduce injuries, errors, defects and costs, 2) reduce employee turnover and absenteeism, 3) improve ease-of-use, morale and satisfaction, 4) improve quality and productivity and 5) stimulate innovation.*

*According to the Executive Summary prepared by the U.S. Army Center for Health Promotion & Preventive Medicine in response to their ergonomic assessment conducted in Oct/Nov 1996 for Portland District, the following corrective measures were recommended: the need for more involvement in health and wellness programs including physical fitness programs, the need for training in ergonomics principles, and the need to lessen the heavy physical demands for an aging workforce. In addition, ergonomics training was suggested to help modify work practices and continuously improve tasks. Ergonomic-related injuries presents an on going hazard and should be addressed as any other hazard in the workforce.*

*The Portland District Safety Office offers the following services and resources to incorporate the above recommendations:*

*1. The ErgoEASER CD ROM is an interactive, self-paced program focusing on training and evaluation, worksite analysis, hazard prevention and control and medical management. The program includes seven parts: start-up (operating instructions), introduction, chapter one through five, training appendix, and training. After carefully reviewing all parts, Safety Office recommends focusing on start-up and training. The training section emphasizes four elements: ergonomics, risk factors, signs/symptoms, and mastery of exercise. Throughout the training section, the audience is periodically tested. The ErgoEASER presents valuable ergonomic fundamentals and methods for preventing musculoskeletal disorders. Although the training section is captivating, it sacrifices clarity by presenting too much information per screen. The program could be more user-friendly. Check out CD through Safety Office and copy it onto your hard drive.*

## *Ergonomics Program*

### *Page 2*

- 2. "Ergonomics at Work" is a 14- minute video that shows how people and machines work together with the correct ergonomic approach and combine safety with increased productivity.*
- 3. Safety Office has access to brochures that can be shared with field employees. A very good one is "VDT Ergonomics Program and Safety Training Systems." The brochure includes information on posture, repetitive motion, charts on trouble shooting, and a 3- page checklist for adjusting workstations.*
- 4. Safety Office recommends that employees be on ergonomic teams just as any other safety team to address ergo problems on an on going basis. Weekly safety meetings can cover ergonomics issues as well. Those who have accidents can be asked to watch videos or visit appropriate web sites. Safety Office has a list of ergonomic web sites for your reference.*
- 5. Safety Office is available to serve as POC for questions, training materials and information on incorporating ergonomics programs, and evaluating workstations.*
- 6. Safety Office has an Ergonomic Job Analysis Checklist and Workstation Chair Checklists for your reference.*
- 7. Currently, Oregon Governor's Occupational Safety & Health Conference is happening March S-i 1, 1999. The following ergonomics programs/workshops are going to be offered and are recommended by Safety Office for managers, supervisors and employees to help increase awareness: "Performance Management for Ergonomics & Safety", Ergonomics: "Occupational Exposure to Vibration", "Office Workstation Boot Camp", "Introduction to Ergonomics: Prevention of Repetitive Motion Injuries in the Workplace", "Vibration: Whole-body & Hand-arm", "Office Ergonomics: Design for You & Your Work", "Controlling Ergonomic Risks in the Industrial Environment", "Construction Ergonomics". Two other programs that are related to ergonomics and apply to Portland District are: "In vesting in the Aging Worker: Maintaining Your Experienced & Skilled Workforce", ""Keeping Joint Pain from Becoming a Strain-Sprain 801 Claim". Call Oregon Governor's Conference; (503) 378-3272 for registration information to attend programs.*

## **Additional Ergonomic References**

1. Arranging Your Workstation to Fit You
2. Back Facts
3. Blueprints 2-Office Ergonomic Task Analysis
4. CTD Guide-Preventing Cumulative Trauma Disorders in the Workplace
5. Carpal Tunnel Syndrome
6. Cumulative Trauma Disorder
7. ErgoAnalyzer Industrial Handbook
8. Ergonomic Chair Features
9. Ergonomic Furniture Web site
10. Ergonomic Web Sites
11. Ergonomics Makes Good Management Sense
12. Evolution of Low Back Pain
13. Five Minute Warm-ups
14. Lighting in the Office Environment
15. NIOSH-Elements of Ergonomic Programs
16. Office Ergonomic Assessment Form
17. Safety and Health-Ergonomics Articles
18. USMC Applied Ergonomics Course
19. VDT Ergonomics Program
20. Work Design-Industrial Ergonomics, Stephan Konz

## **Ergonomic CD ROM Review**

- 1996    ErgoEASER (Dept of Energy) - The ErgoEASER CD ROM is an interactive, self-paced program focusing on training and evaluation, worksite analysis, hazard prevention and control, and medical management. The program includes seven parts: start-up (operating instructions), introduction, chapter one through five, training appendix, and training. The training section emphasizes four elements: ergonomics, risk factors, signs/symptoms, and mastery of exercise. Throughout the training section, the audience is periodically tested. The ErgoEASER presents valuable ergonomic fundamentals and methods for preventing musculoskeletal disorders. Although the training section is captivating, it sacrifices clarity by presenting too much information per screen. The program could be more user-friendly.

## **Ergonomic Video Reviews**

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|------|--|-------|
|      | <u>The Back Game</u> (USA Visual Info Ctr) - Through questions and answers, gives information on the back and how to prevent injury.   | 17:00 |
|      | <u>Back To Basics</u> (VISUCOM) - Helps viewers to understand how to prevent lower back pain and injury. The biomechanics of the back and lifting tasks are explained.   | 21:00 |
| 1983 | <u>Ergonomics At Work</u> (National Safety Council) - How people and machines work together more safely while increasing productivity.   | 14:00 |
|      | <u>Ergonomic Work Positioners</u> (IZACC) - Focuses on the importance of managing work surface interface to increase productivity. Helps in task completion time, higher quality with less rework, reduces occupational injuries, and improves working conditions. |       |

Additional Ergonomic References  
Page 2

	<u>Lifting and Carrying</u> (SafetyCare) Three main focuses: back injuries and the role of the spine, lifting and carrying techniques, and factors governing manual handling.	
1984	<u>Minimizing Back Strain On The Job</u> (Tel-A-Train) Gives an understanding of how back injuries occur. Shows proper lifting techniques.	25:00
1985	<u>Office Ergonomics: Including Carpal Tunnel Syndrome</u> (Tel-A-Train) Addresses ways to minimize the chance of developing cumulative trauma disorders in an office environment including prevention of back ailments, eye strain, and carpal tunnel syndrome.	15:00
1986	<u>Pre-Work Warm-ups: Safety and Health Services</u> - Assists in implementing warm-ups at worksites. Gives demonstrations of cardiovascular exercise and stretching techniques. Discusses safety tips for stretching.	
	<u>Session I</u>	08:00
	<u>Session II</u>	07:00
1991	<u>Repetitive Motion Injuries</u> (Great Performance) - Helps to understand the differences between normal fatigue that comes from using muscles and the inflammation caused by strain, overload, and repeated trauma.	09:00
	<u>Safety On The Job</u> (AIMS) - A Four Part Series.	
	<u>Preventing Back Injuries: Tape 3</u> - Shows how to prevent back injuries on the job and how to develop habits that will strengthen back muscles.	24:00
1983	<u>Your Healthy Back</u> (USACE) - Helps workers take responsibility for preventing back injuries.	
	<u>Understanding Your Back: Tape 1</u>	24:00
	<u>Preventing Back Problems: Tape 2</u>	16:00
	<u>Keeping Your Back Healthy: Tape 3</u>	14:00
	<u>Supervising To Prevent and Manage Back Injuries: Tape 4</u>	15:00